

# Intel740™ Graphics Accelerator Performance Software Developer's Kit



The Software Developer's Manual is a comprehensive reference for programming for the Intel740 chip. The manual characterizes the hardware capabilities including 3D rendering, 2D display and video capabilities. The manual also includes a discussion of the programming environment, in particular the DirectX\* and OpenGL\* APIs. And finally, the Software Developer's Manual describes approaches to maximizing performance with discussions on throughput, duty cycle and memory bandwidth.

The SDK includes several application notes. The application notes provide a focused and detailed discussion on various Intel740 graphics accelerator features. Topics include chroma-keying, alpha test, alpha blending, optimizing for immediate mode, and optimizing for retained mode. Included with the application notes are code samples. Code samples make features easier to implement and reduces development time.

The SDK also includes a unique tool, Profiler for Observation Architecture (OA). Profiler for OA makes use of the Intel740 graphics accelerator's advanced Observation Architecture.

**INTEL® OBSERVATION ARCHITECTURE**  
Intel® Observation Architecture (OA) is an advanced architecture unique to the Intel740 graphics accelerator that provides a window into the graphics subsystem. This window provides insight into utilization and throughput within the Intel740 graphics accelerator, the driver, and the Pentium® II processor.

## PRODUCT DESCRIPTION

The Intel740™ graphics accelerator is tuned for Intel® processors and Intel® AGPsets. Developers can take advantage of this architecture by using the Intel740 graphics accelerators Performance Software Developer's Kit (SDK). The SDK provides everything a programmer needs to develop for the Intel740 chip. The SDK includes a tutorial, complete documentation, application notes, code samples, and an innovative tool.

The SDK tutorial is a detailed, clear, and concise training guide which describes the steps to developing for the Intel740 graphics accelerator. The tutorial provides an overview of the architecture and a description of the AGP and local memory interfaces. The tutorial also includes instructions on how to predict and maximize a title's performance.

## PRODUCT HIGHLIGHTS

- Complete set of materials for software developers
  - Clear, concise tutorial
  - Comprehensive Developer's Manual
  - Focused and detailed Application Notes
  - Code samples
  - Innovative tuning tool
- Powerful Performance Tuning Tool
  - Access counters in the accelerator, the driver and the CPU
  - Local or remote network monitoring
  - Minimal overhead
  - Easy-to-use interface
  - Real-time monitoring or log data to a file
- Support for standard APIs
  - Microsoft DirectX
  - OpenGL
- Reliable and solid implementation of Direct3D\*
- World-class support
  - 800 phone support
  - On-line Web support
  - Dedicated on-site AE support
- Available from the Web or from the Intel® Literature Center at no charge; order number 290625-001
- Support for standard O/S
  - Windows\* 95
  - Windows NT\*

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OA enables monitoring and tracking using special counters. For example, OA provides counters in the pixel fill engine, the set-up engine, the texture cache, and local memory. This makes it easier to track utilization and throughput. Because the monitoring capabilities are an integral part of the hardware, overhead requirements are minimal.

## PROFILER FOR OBSERVATION ARCHITECTURE

Profiler for Observation Architecture is a powerful performance tuning tool that uses OA to look into the hardware accelerator, the driver, and the CPU. Profiler for OA allows developers to gauge the performance of their application on the Intel® graphics platform, as well as identify and eliminate bottlenecks in the graphics pipeline resulting in well-balanced applications.

Profiler for OA tracks and displays counters in the Intel740 graphics accelerator, for example, utilization of the pixel

fill engine, set-up engine, texture cache, and local memory. Profiler also reports counters in the driver and provides information on triangles and pixels per second, frame rate, and AGP throughput. Finally, Profiler summarizes activity in the processor and gives information on CPU utilization, floating-point and MMX™ technology instructions per second.

Profiler for OA has a simple, easy-to-use interface. It's a flexible tool that may be run locally or remotely over the network. Information can be displayed real time or logged for later analysis and application behavior profiling. Behavior profiling helps to effectively utilize vital engineering resources because developers can target the key areas for optimization; this means reduced time-to-market. The Profiler can be used together with other Intel tools like VTune™ to balance the system from top to bottom.

FEATURES	BENEFITS
■ All-in-one kit	■ One-stop-shopping for developing for the Intel740™ graphics accelerator
■ Tutorial	■ Get started immediately
■ Source code	■ Enables code modifications for specific requirements
■ Electronic documentation	■ Easy reference
■ Performance Tuning Tool	■ Easily optimize code
■ World-class support	■ Reduced time-to-market

INTEL ACCESS	
World Wide Web Home Page	<a href="http://developer.intel.com">http://developer.intel.com</a>
Application Bulletin Board System	(916) 356-3600
Other Intel Support	
Intel Literature Center	(800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
Retail PC and Network Products	(800) 538-3373 or (503) 629-7000 7 a.m. to 7 p.m. PST
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

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Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.

The Intel740 graphics accelerator may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

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